livestreamcctv

4 CHANNEL HD MDVR SYSTEM

Special Attention: Images of this model is for reference only, and no further notice will be given in case of any changes.

V3.0

1.1.1 Disclaimer

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Contents

1. Product Introduction 3
1.1. Overview 3
1.2. Specifications 4
1.2.1. Specifications 4
1.2.2. Basic Working Parameters 6
1.3. Application 7
1.3.1. Environmental Adaptability 7
1.3.2. Precautions 7
1.3.3. Typical Applications 8
1.4. Features 9
2. Appearance and Accessories 9
2.1. Front Panel Definitions 10
2.1.1. LED Indicator 10
2.1.2. Other Definitions 10
2.2. Rear Panel Definitions 11
2.3. Definitions of External Cables 11
2.3.1. Power Cable 11
2.3.2. Audio/Video Input/Output Cables 12
2.3.3. GPS Module 13
2.3.4. Wi-Fi Antenna 13
2.3.5. Extension Cables 13
2.4. Infrared Remote Controller 14
3. Description of Host Menus 15
3.1. Menu Structure 15
3.2. User Login 16
3.3. Main Menu 17
3.4. Video Playback 17
3.5. System Setup 19
3.5.1. Basic Setup 19
3.5.2. Record Setup 20
3.5.3. Power Setup 23
3.5.4. Alarm Setup 24
3.5.5. Security Setup 27
3.5.6. Network Setup 28
3.6. System Info 29
3.7. Management Tools 30
3.7.1. Log Management 31
3.7.2. Disk Management 32
3.7.3. Factory Settings 33
3.7.4. Configuration Management 34
3.7.5. PTZ Management 35
3.7.6. OSD Setup 36

3.7.7. System Upgrade 36
3.7.8. Serial Management 37
4. Host Upgrading Instructions 37
4.1. Upgrading Modes 37
4.2. Upgrading Steps 37
4.2.1. Applications 37
4.2.2. Uboot/ Rootfs/Kernel 38
4.2.3. SCM 38
4.2.4. Viewing Version Number 38
5. FAQs 39
5.1. Questions on Recording 39
5.2. Questions on Alarm 39
5.3. Others 39

1. Product Introduction

1.1. Overview

This MDVR is a high-end mobile hard drive DVR dedicated for mobile surveillance market. Applying high-speed processor and embedded operating system and integrating various state-of-the-art technologies of IT industry, such as audio/video codec technologies, large-capacity hard drive storage technologies, stream media network technologies, video/audio noise reduction technologies, mature damping technologies and wide voltage design, it features concise appearance, flexible installation, powerful functions and safe and reliable system.

Product picture:

1.2. Specifications

1.2.1. Specifications

Item		Description
OS		Linux
Graphics Operation Interface		System parameters can be set through external display and remote controller
Security Management		2-level management for user password, administrator password, supporting encrypted transmission
Video and Preview	Video Input, Output	4-channel video input, 1channel video output; 1.0Vp-p, 75Ω
	OSD	Character superposition function, information superposition of time and date, device ID and GPS, etc.
	Video Compression Format	Compression coding. Applying Hisilicon hi-performance processor.
	Dual-Stream	Supported
	Preview Function	Preview of 1-channle, 4-image stitching, supporting full screen triggered by event and switching of stitched images
	Frame Rate	PAL: 100 frames/s, up to 25 frames/s per channel; NTSC: 120 frames/s, up to 30 frames/s per channel
	Resolution	CIF, HD1 and D1 for selection, supporting 2 channels of D1+ 2 channels of CIF at the most
	Quality	Grade 1 to grade 5 for selection (descending)
	Bit Rate	CIF: 256Kbps ~ 1.5 Mbps, 8-level bit rates for selection HD1: 600Kbps ~ 2 Mbps, 8-level bit rates for selection D1: 800Kbps ~ 3Mbps, 8-level bit rates for selection
Audio	Audio Input, Output	4-channel input, 1-channel output
	Compression Format	G.726 coding
Recording	Storage	Supporting one 2.5” hard drive and one SD card, which

	Medium	supports up to 32G, supporting data redundancy storage technology;
	File Format/ System	ASF/FAT32
	Video Strategies	Recording at startup by default, supporting timed recording, recording triggered by alarm and event, as well as manual recording
	Video Search	Searching by time, type, storage device and other conditions
	Video Playback	Supporting playback on local device, supporting synchronous playback of up to 4 channels and analysis on vehicle information in the files
		Supporting fast forward, fast backward, play and pause, supporting fast forward and fast backward at 2x, 4x, 8x and 16x speed, supporting file play from selected time
Alarm	Alarm Input/ Output	6-channel on/off signal alarm input, 1-channel on/off signal alarm output
	Alarm Recording	Prerecording function 15 seconds before alarm, duration of recording after alarm can be adjusted from 30s ~ 30min
	Storage Space Alarm	Supporting settings for alarm of storage space
	Function Alarm	GPS overspeed alarm, acceleration alarm, motion detection alarm
Communication Ports		RS232, RJ45 10M/100M self-adaptable network interface
Wireless Transmission (Optional)		Supporting Wi-Fi;
GPS (Optional)		Supporting external GPS
PTZ Control		Supporting PTZ control realized by local;
Parameter Configuration		Supporting parameter configuration functions for mobile DVR coding channel;
G-Sensor		Embedded
System Upgrading		Supporting SD card, hard drive upgrading and remote upgrading
Power Supply and Power Consumption	Power Supply	1. ACC on/off 2. Hard drive lock on/off 3. Delayed shutdown 4. Timed on/off
	Input Voltage	DC:+8V ~ +36V
	Output Voltage	+12V@4*0.5A; +5V@0.5A
	Power-off Protection	With patented UPS power supply continuous working technology, it can work for 3~5 seconds after external power supply is cut so that the intactness of video data can be kept upon sudden power failure
	Power	<10W in normal operation; <0.5W in standby mode

	Consumption	
Operating Environment	Temperature	Normal: 0℃ ~ +60℃; upon hard drive preheating: -25℃ ~ +60℃
	Humidity	10% to 95%
Dimensions		160(W) x62(H) x200(D) mm.
Weight		Net: 2200g, Gross: 3500g

1.2.2. Basic Working Parameters

Item	Working Parameters	Description
Power Supply Input	8 ~ 36V	Input voltage at +8V~+36V, the device will be automatically turned off and enter the protection mode if the voltage is lower than 8V for a long time; if the voltage is higher than 36V for a long time, the voltage protection device will block the power supply.
Output Voltage	12V	Output voltage12V (+/-0.2V), Max. current: 2A.
	5V	Output voltage5V (+/-0.2V), Max. current: 0.5A. Al outputs are provided with overcurrent protection, when the output current is greater than 1.2 times of the preset max. current for a long time: the output will be cut automatically and the output will be resumed upon normal loading.
Vehicle Key Signal	≤6V	Vehicle key off.
	≥7.5V	Vehicle key on.
Video Input Impedance	75Ω	Impedance of 75Ω for each channel of video.
Video Output	1Vp-p	Outputting a 1Vp-p CVBS analog signal.
I/O Interface	0 ~ 2V	Low-level alarm.
	Above 5V	Hi-level alarm.
RS232 Serial Ports	Standard Interface	Supporting 2 RS232 ports
GPS Antenna Pedestal	External Antenna	Antenna interface with embedded GPS
Ethernet Interface	Standard Interface	Standard RJ45 interface, with indicator.
SD Card Interface	Standard Interface	Compatible with commerciall avaiblable brands.
Working	0℃~ +55℃	Hard drive heating -25℃ ~ +55℃

Temperature		

1.3. Application

1.3.1. Environmental Adaptability

Applicable to various applications, and the indexes are detailed as follows:

Item	Index
Upper limit of temperature for storage	65℃
Upper limit of temperature for operation	55℃
Lower limit of temperature for storage	-40℃
Lower limit of temperature for operation	0℃, or -25℃ with hard drive heating module
Working altitude	–300 ~ 3048m (10, 000 ft)
Transmission altitude	–300 ~ 12, 192m (40, 000 ft)
RH	20%~95%
Max. temperature gradient	20℃/h
Vibration threshold (Unpowered)	No greater than 5mm p-p (5 – 22Hz) 49m/s2 (5.0G) (22 – 500Hz)
Vibration threshold (Normal operation)	No greater than 1.0mm p-p (5 - 22Hz) 9.8 m/s2(1.0G) (22 – 500Hz)
Impact threshold (Unpowered)	No greater than 1200G, (11, 760m/s2) (duration 1 ms, 1m height, semi sine wave)
Impact threshold (Normal operation)	No greater than 500G, (4, 900m/s2) (duration 2 ms, semi sine wave)
IP of enclosure	IP54

1.3.2. Precautions

To ensure safe use, satisfactory performance and extended service life of the product, please pay attention to the following when installing and operating the device:

1) During the installation and operation of the device, make sure to observe all criteria for electronic products as well as requirements for vehicles and other connection devices;
2) Power supply and grounding:
   a) The direct input range of the power supply of the device should be DC 8V to 36V, avoid reverse connection or short circuit of output. Please pay attention to the power supply capacity of the power cable.
   b) Even if the device is turned off, there's still electricity left inside it, please prevent short circuit. Before connecting to other external devices, please cut the connection between the device and the power supply;
   c) The output voltage of the device is 12V, only used for power supply of the camera, please do not enclose any device that are not allowed to be used on the device;
   d) The sensor input mode of the device is leveling, if the external voltage is less than

2V, it is regarded to be low level, and the voltage between 5V~30V is regarded to be high level, and the voltage over 30V will cause abnormal data collected by the device or damage of the device. The voltage higher than 2V and lower than 5V is illegal.

e) Correctly connect the earth wire of the device to the earth wire of the vehicle to constitute the circuit;

f) If the device is to be laid aside for a long time, it is better to completely cut the power supply to extend the service life;

3) Humidity requirements:

a) The device should be installed in dry environment, avoiding humid, dripping and spraying of water. Do not install the device at sunken locations with the possibility of water accumulation or wet locations subject to liquid dripping;

b) Do not touch the device by wet hand or touch the device while standing in water or other water sources, which may cause electric shock;

4) Installation locations:

a) To extend the service life of the device, try to install the device at locations on the vehicle subject to slight vibration.

b) The device shall be installed in ventilating parts of the vehicle: when installed on a level plane, the device shall be kept 6 inches (15cm) away from other objects to facilitate ventilation and cooling; do not install the device in an enclosed space (the trunk, for instance).

c) External cables of the device should be provide with sufficient spacing and flame-retardant housing to prevent the cable from bending or abrasion due to vibration and thus cause leakage of electricity;

d) Keep the device from heat source of the vehicle or sundries, it is strictly prohibited to place anything on the device.

e) The device can only be installed horizontally or vertically sideways (please consult the manufacturer if you need to install it along another direction), installation at any other angle may damage the device and is strictly prohibited.

5) Device safety:

a) Prevent the driver or passenger from intervening or damaging parts, cameras, cables and other accessories of the device, keep the device away from other restricted vehicle parts;

b) Starting the vehicle while installing components, cameras, cables and other accessories of the device may cause damage of the device, keep the vehicle still during the installation and prevent it from dropping.

1.3.3. Typical Applications

Applications: bus, school bus/staff bus, logistic trucks, coach bus, taxies, train/metro/light rail, vessels.

1.4. Features

- H.264 video code compression, dual stream output;
- G.726 audio compression format, 4-channel audio input, 1-channel audio output.
- Power-off protection in emergency, adopting special UPS technology which ensures the device to work for 3-5 seconds after the external power supply is cut, thus ensure complete video data and avoid file damage;
- Real-time local recording, multiple formats for selection, supporting full screen of single channel or multi-window stitching upon accidents;
- Switch signal interface, 6-channel alarm input, 1-channel alarm output;
- PTZ control;
- Multiple recording modes: record upon startup, timed recording and triggered recording;
- Universal video file formats: applying ASF format, which can be played with the universal software VLC or the supplied playback software, supporting 1-channel or 4-channel synchronous playback;
- Data storage, supporting a 2.5” hard drive and 1 SD card with the capacity up to 32G; supporting dual-stream mirror image video recording, SD card recording upon loss of hard drive, supporting hard drive heating, applying drawer-type hard drive box;
- Wide voltage design, 8-36V DC wide voltage input, suitable for various vehicles; DC 5V/0.5A, 12V/2A output;
- Rapid startup, capable of entering normal working mode within 25 seconds after startup; supporting on/off with key switch, timed on/off and delayed on/off, etc.;
- Optional functions:
  - 3G wireless transmission;
  - Wi-Fi wireless transmission;
  - GPS, G-sensor acceleration sensor, with precise time correction;
  - IP calling;
  - Dialing;

2. Appearance and Accessories

Front View:

Back View:

2.1. Front Panel Definitions

2.1.1. LED Indicator

- [PWR]Power supply state indicator: LED on ─ system powered.
- [ALM]Alarm indicator.
- [REC]Recording indicator: LED ON - recording.
- [HD]Hard drive indicator: LED ON -hard drive successfully loaded; LED out -failure loading hard drive; LED flashing -hard drive recording.
- [SD]SD card indicator: LED ON -SD card successfully loaded; LED out-failure loading SD card; LED flashing-SD card recording.
- [GPS]GPS signal indicator.
- [ERR]Error indicator.
- [V-Loss]Video loss indicator: LED ON -1 or more video inputs lost.
- [HTR]Heating indicator.
- [NET]Network indicator.

2.1.2. Other Definitions

- [IR]IR receiver for receiving signals from the remote controller.
- [LOCK]Hard drive lock, the device can be started only after being locked and be automatically in the standby status after being unlocked.

- [MIC]MIC input.
- [EAR]Earphone output.

2.2. Rear Panel Definitions

- [PWR]Power supply interface.
- [*][GPS]GPS module interface.
- [EXTEND I/O]Extension interface.
- [RJ45]Network interface.
- [AV IN]Audio/video input interface.
- [AV OUT]Audio/video output interface.
- [*][WI-FI]Wireless LAN antenna interface.
- [*][3G]3G antenna interface.

2.3. Definitions of External Cables

2.3.1. Power Cable

The figure below shows the power cable, and the red wire and the black wire are directly connected to the battery jar of the vehicle. The red wire is connected to the positive pole, and the black to the negative pole. The yellow wire is connected to the ignition wire when the on/off mode is set to ignition mode. The device will be automatically turned on once the vehicle key switch is turned on and automatically turned off when the vehicle key switch is turned off. The yellow wire is connected to the position for the vehicle key to turn on all dashboard lights (the one before the position to start the motor).

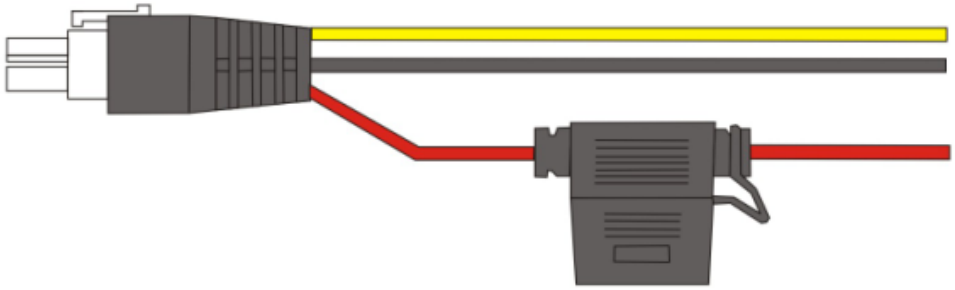
Note: 1) Before connection, confirm the voltage of the battery jar between 12V—24V, or the device may be burnt;

2) After the connection, pay attention to the insulation between power cables to prevent short circuit of the power supply that may burn the battery jar.

3) The yellow wire must be connected to the ignition wire, otherwise, the device will not support ignition mode.

4) Note: the mobile device must be directly connected to the positive and negative poles of the battery jar without any earth, which may generate negative pulse and disturb normal

operation of the device. Power cables for the positive and negative poles must have the diameter of above Φ1.5.

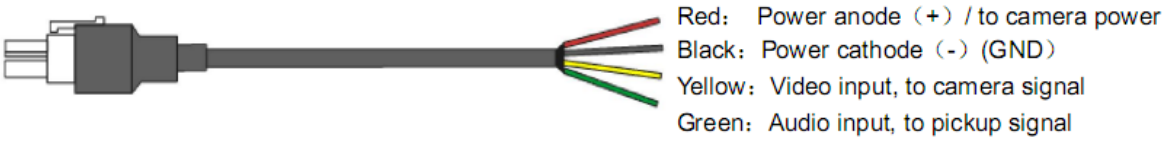


Power cable

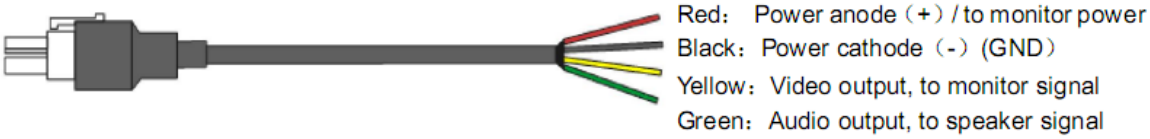
The figure above shows the actual power cable

Circuit Color	Name	Description
Black	BAT-	Black wire for grounding
Red	BAT+	Red wire for power supply
Yellow	ACC	Yellow wire for ACC

2.3.2. Audio/Video Input/Output Cables


Red: Power anode (+) / to camera power
Black: Power cathode (-) (GND)
Yellow: Video input, to camera signal
Green: Audio input, to pickup signal

Input cable (to AV In port)


Red: Power anode (+) / to monitor power
Black: Power cathode (-) (GND)
Yellow: Video output, to monitor signal
Green: Audio output, to speaker signal

Output cable (to AV Out port)

2.3.3. GPS Module

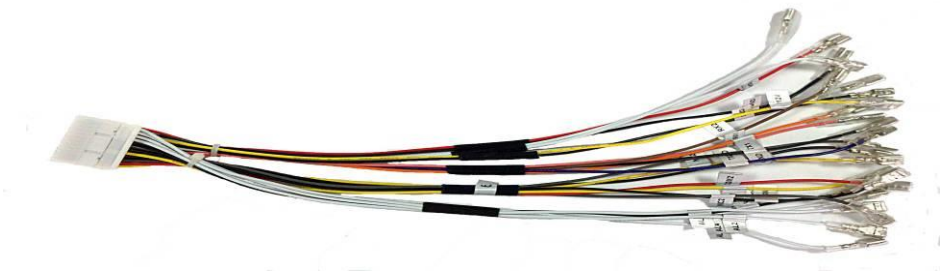
GPS module antenna

The figure above shows the actual GPS module

2.3.4. Wi-Fi Antenna

Right: Wi-Fi antenna

2.3.5. Extension Cables



Extension cables

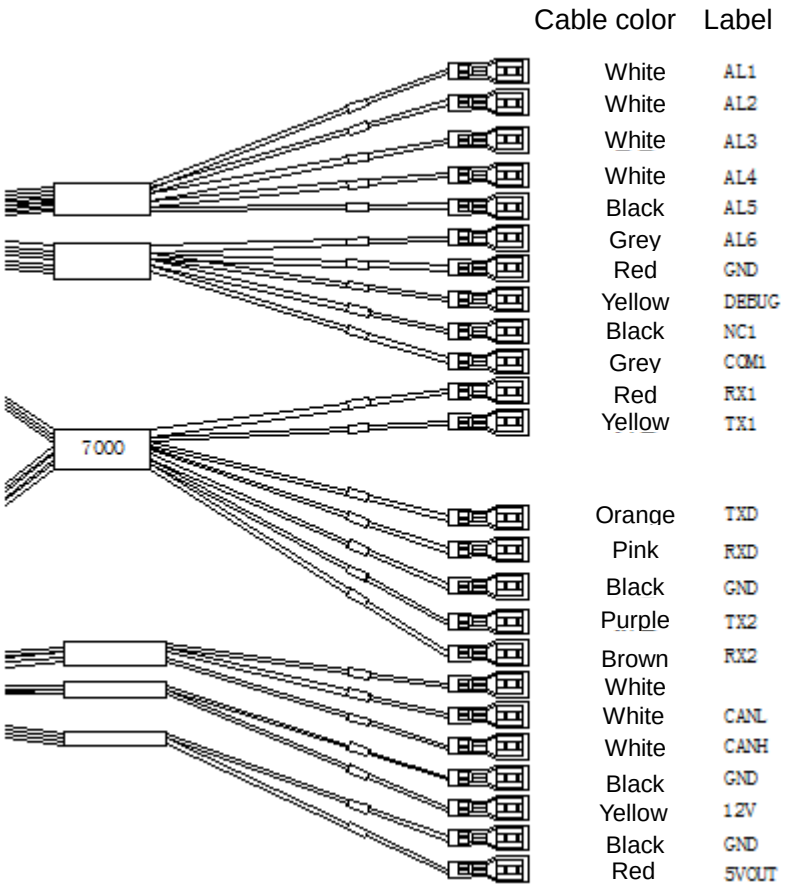


Diagram of Extension Cables

2.4. Infrared Remote Controller

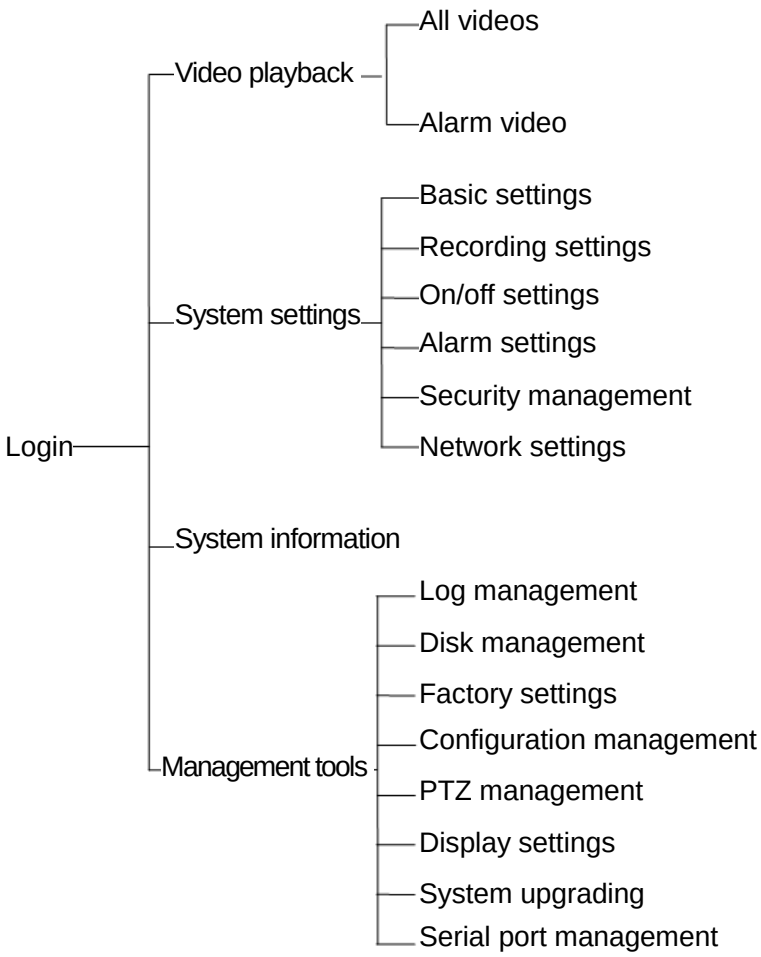
Key	Function	Image
	Remote on.	
[LOGIN]	Login the system for parameter settings.	
[0-9]	[0-9] keys: In the setting status, the numeric keys are used for number selection. During playback, keys 1, 2, 3 and 4 are used for switching between single window of channels 1-4, key 5 is used for switching to synchronous playback of 4 channels.	
[-][+]	Increasing and decreasing (scrolling) in setting some menu parameters.	
[DEL]	Backspace when inputting numbers.	
[EXIT]	Exits to the preview menu or returns to the parent menu.	
[ENTER]	Confirms parameter selection and settings as well as operations like play.	
▲, ▼, ◀, ▶	Arrow keys that move the cursor upward, downward, leftward and rightward. The left and right keys are used for increasing and decreasing the volume during surveillance playback.	

[GOTO]	Plays the video from the selected time.	
[INFO]	Displays system information in the surveillance status.	
	Fastback, 2x/4x/8x/16x for selection, press once to switch to the next speed in order, press [Play] to resume normal speed;	
	Plays the video during playback.	
	Fast-forward, 2x/4x/8x/16x for selection, press once to switch to the next speed in order, press [Play] to resume normal speed;	
	Starts recording in manual recording mode.	
	Stops recording in manual recording mode.	
	Stops playing the video in playback mode.	
	Pauses during playback.	
[F1]	Displays information like acceleration GPS, Wi-Fi, 3G module, SIM card, dialing, online, etc. in the surveillance menu.	
[F2]	Monitors single channel and displays PTZ information.	
[F3-F8]	Reservation	

3. Description of Host Menus

3.1. Menu Structure

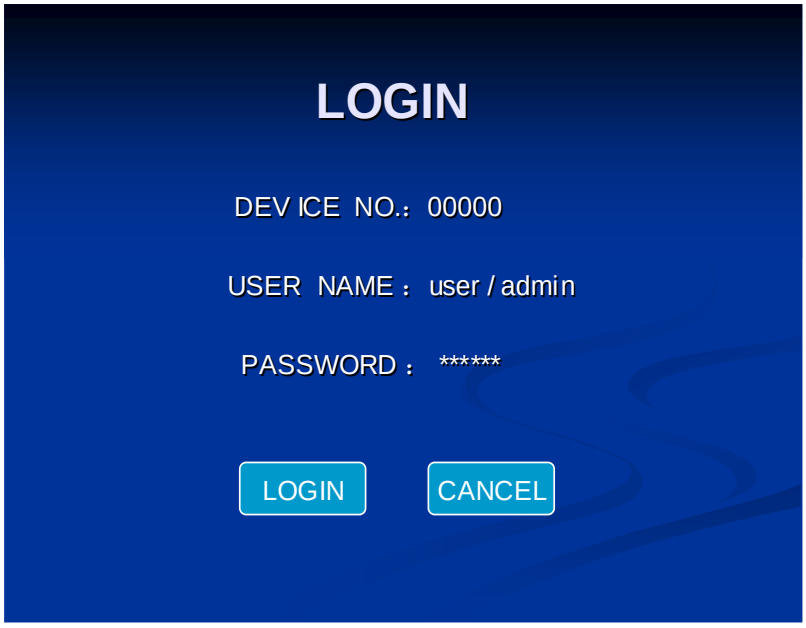
The user may control various functions of the device through a series of menu operations, in this chapter, we will briefly introduce the structure of such menus, and detailed description will be provided in subsequent chapters.



Menu Structure

3.2. User Login

- When the password is set to “enabled”: press the [ENTER] button after startup of the main device to enter the login menu (as shown in the figure below), where it is required to input the correct user password or administrator password;
- Move the cursor to “Login” and press [ENTER] to enter the system main menu;
- Move the cursor to “Cancel” and press [ENTER] to quit the login menu.
- When the password is set to “Disabled”: press the [ENTER] button after startup of the main device to directly enter the system main menu without login;
  Note: after restoring to factory settings, the password for ordinary user is 000000 and that for administrator is 888888; You can only view the system menu if you log in with the user password and will have no privilege to modify the parameters; if you log in with the administrator password, you will be able to both view the system menu and modify settings.



3.3. Main Menu

After user login, you will enter the following main menu, consisting of: PLAYBACK, SYSTEM SET, SYSTEM INFO, MANAGE TOOL.

3.4. Video Playback

In the main menu, press the arrow keys to select the video to playback, and press [ENTER] to enter the REC SEARCH interface.

Note:

After entering the REC Search interface, the system will automatically search the date of the video existing in the current month. The cursor cannot move in this table, the dates in yellow are those with existing video records. You can only search files of one day each time. When the month inputted in is not the current month, the status list will be refreshed

"REC TYPE": Press [Enter] to select types to recall: All videos\Alarm video. All videos by default.
"DISK SELECT": Press [Enter] to select disk: SD\HDD. HDD by default.
"DATE": Press the numeric keys to input the date, the current date by default.
"START TIME": Press the numeric keys to input the time, 00: 00 by default.
"END TIME": Press the numeric keys to input the time, 23: 59 by default.
"SEARCH": Move the cursor to "search" and press[Enter] to enter the following menu of SEARCH RESULT.

SEARCH RESULT
DATE： 2011-05-27
TYPE RES START END CH SIZE
Normal D1 15：30 16：00 1 154M
Normal D1 15：30 16：00 2 53M
Normal CIF 15：30 16：00 3 100M
Normal CIF 15：30 16：00 4 98M
Alarm D1 16：10 16：12 1 7M
Alarm D1 16：10 16：12 2 7M
Alarm CIF 16：10 16：12 3 9M
Alarm CIF 16：10 16：12 4 10M
FIRST
UP
DOWN
LAST

- Press the arrow keys to select the video to be checked, press [ENTER] to play the video and press [EXIT] to return to the parent menu.
- Press the arrow keys to select "Home", "Previous", "Next", "End", and press [ENTER] to

display page turning information.

3.5. System Setup

In the main menu, press the arrow keys to select the SYSTEM SETUP menu, and press [ENTER] to enter the following SYSTEM SETUP menu. The menu mainly consists of the following submenus:.BASE SET, REC SET, POWER SET, ALARM SET, SECURITY, NETWORK.

3.5.1. Basic Setup

This menu is mainly for settings of basic information of the system.

- Date Format

This is used for selecting date format, i.e., year-month-date, date-month-year, month-date-year. press [ENTER] for selection.

- Time Zone

  This is used for selecting time zone, GMT+08 by default, press [ENTER] or [-] [+] for selecting other time zones.

- Date/Time

  This is used for modifying the current date, press numeric keys for input

- Idle Time

  This is used for setting menu wait time, when the preset time is exceeded, the current user will be logged out automatically and the system will return to the surveillance status. The default wait time is 30 seconds, and the range is 30~3600 seconds, which can be inputted with the numeric keys.

- Device No.

  This is used for occasions where one remote controller is used for controlling multiple devices, adopting different passwords and device IDs may avoid mutual interference. When setting the device No., press DEL to delete the original number and press the numeric keys to input the number, which must be in 5 digits. Enter security settings to set password corresponding to the device No.

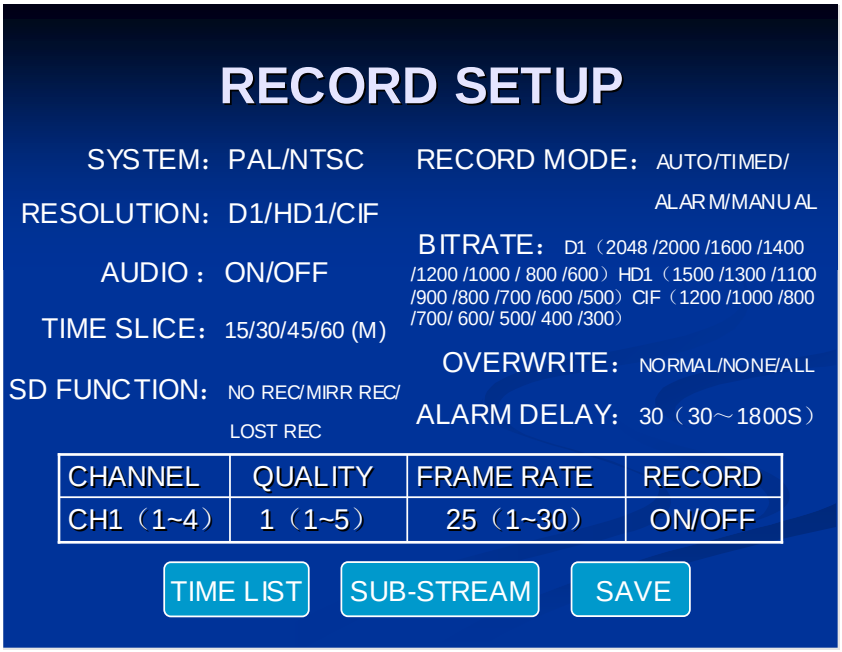
- “Company Name”, ”License Plate Number”, ”Driver Name”, ”Route Number”

  Press [Enter] to enter keypad menu, press the arrow keys to move the cursor, and press [Enter] to select corresponding letters and digits to be inputted.

  Upon completion of settings, press the Save button to save the settings.

3.5.2. Record Setup

This menu is for settings of recording parameters.



- System

PAL/NTSC, press [ENTER] to input.

- Record Mode

  Record upon Startup (default)/Timed Recording/Alarm Recording/Manual Recording, press [ENTER] to input.

  There are 4 modes: Startup, Timed, Manual and Alarm, and the default mode is Startup

  - **Startup**: Automatically starts recording at startup of the device
  - **Timed**: Automatically starts recording at the set time
  - **Manual**: After startup of the device, press the Record key to start recording
  - **Alarm**: After selecting “Enable” and enable “Record” and “Output” in Alarm Settings, the system will automatically start recording alarm files

- Bitrate

  The data traffic per second, the default value is 1600KBPS, press [ENTER] or press [-][+] for selection.

- Resolution

  D1/HD1/CIF, D1 by default, press [ENTER] to input.

- Audio

  To set whether to encode audio synchronously while video recording or not. Select enable/ disable, and press [ENTER] to input.

- Time Slice

  Length of each section of video recorded in continuous recording status, 15/30/45/60, [ENTER] to input.

- SD Function

  No recording / Mirror image recording / Record upon loss, press [ENTER] to input.

  1) No recording: recording is only available for hard drive, even if it’s full, the SD card will not be used for recording.
  2) Mirror image recording: When the hard drive is recording video with the main stream, the SD card is recording video with the sub-bit stream; When the hard drive is not recording, the SD card will not record; the recording will not be started without the SD card; and the recording with SD card will not be started without the hard drive;
  3) Record upon loss: in case hard drive error or absence of the hard drive, the SD card will record video with the main stream;

  Note: If both the hard drive and the SD card exist, priority should be given to the hard drive.

- Video channel settings

  This is used for setting recording parameters of each channel, press [ENTER] to input.

  4 channels, image levels from 1~5, with level 1 as the highest and level 5 as the lowest, frame rate: 1~25 frames for PAL and 1~30 frames for NTSC; recording can be enabled or disabled.

- Video overwriting strategy

Options: “Off, Normal Video, All Videos”, for setting whether to automatically overwrite the video, and press [ENTER] to input.

1) Off: the video will not be automatically overwritten when the hard drive or SD card is full;
2) Normal Video: normal video files instead of alarm video files of the hard drive or SD card will be automatically overwritten;
3) All Videos: both normal video files and alarm video files of the hard drive or SD card will be automatically overwritten.

Note: The hard drive and the SD card are overwritten circularly.

- Delay for alarm recording

30 seconds by default, adjustable within the range 30 seconds~1800 seconds, press numeric keys to input.

- Timer list settings

Move the cursor to ”Record Time List”, and press [ENTER] to enter the following list menu:

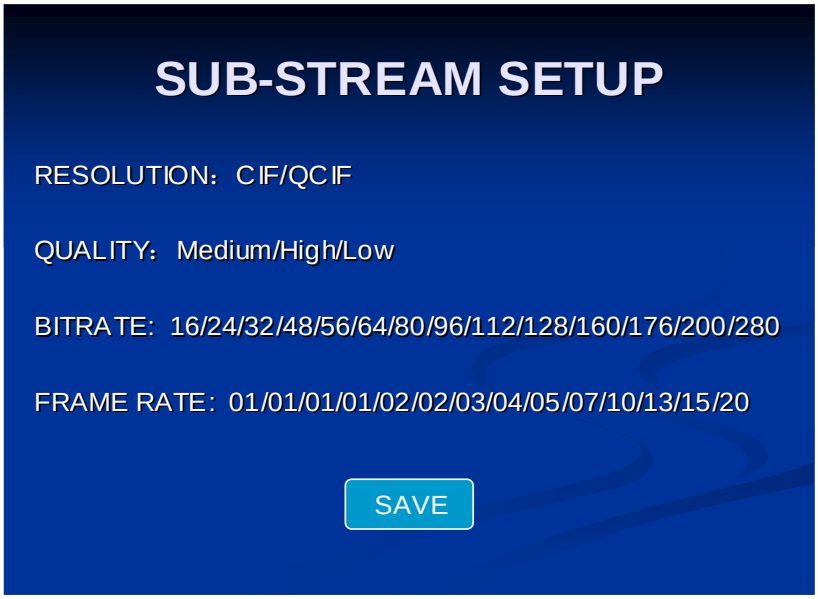
1) The Record Time List will only be enabled in the timed recording mode, which is selected in the on/off mode, when the device is turned on, it will start recording at the set time automatically and stop recording upon completion of the task.
2) The user may set the recording time in his preferred way, period 1 and period 2 are not intercrossed, each period is inputted with the numeric keys; move the cursor to a certain period and input numbers, period 1 is the first period of the recording cycle of any day, and period 2 is the first period of the recording cycle of any day, 00: 00---23: 59 for 24-hour time list settings, and upon completion, press Save to save the settings and return to the Recording Settings menu.

Upon completion of recording settings, press the Save button to save the settings.

- Sub-Stream

Move the cursor to “sub-stream”, press [ENTER] to enter the follow menu of

Sub–stream Setup:

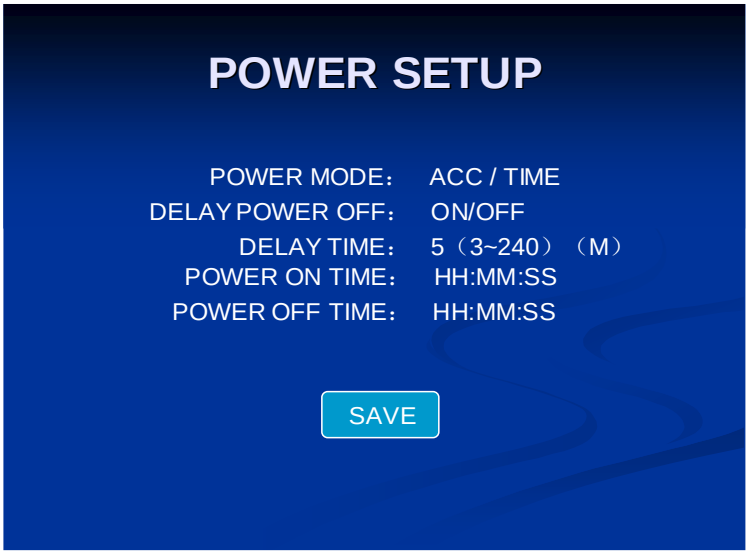


- Resolution
  CIF, press [ENTER] to input.
- Quality
  Hi/Med/Low, press [ENTER] to input.
- Bitrate
  16/24/32/48/56/64/80/96/112/128/160/176/200/280 bits, press [ENTER] to input.
- Frame rate
  01/02/03/04/05/07/10/13/15/20 frames, corresponding to bit rate, press [ENTER] to input.

Upon completion of settings, you must press the Store button to save settings.

3.5.3. Power Setup

Set on/off parameters.



- On/off mode

  Set on/off mode and press [ENTER] to input.

  1) TIME mode: turns on or off the device according to the on/off period set by the user.
  2) ACC mode: turns on/off the device according to the vehicle key signals.

- Delayed off

  The device will be turned off upon the delayed off time, and then press [ENTER] to input.

- Delay time

  The delay time can be set within the range 3~240 min, press DEL to clear the original number and press numeric keys to input.

- Timed on time

  Set the time to turn on the device in the timed mode, press numeric keys to input.

- Timed off time

  Set the time to turn off the device in the timed mode, press numeric keys to input.

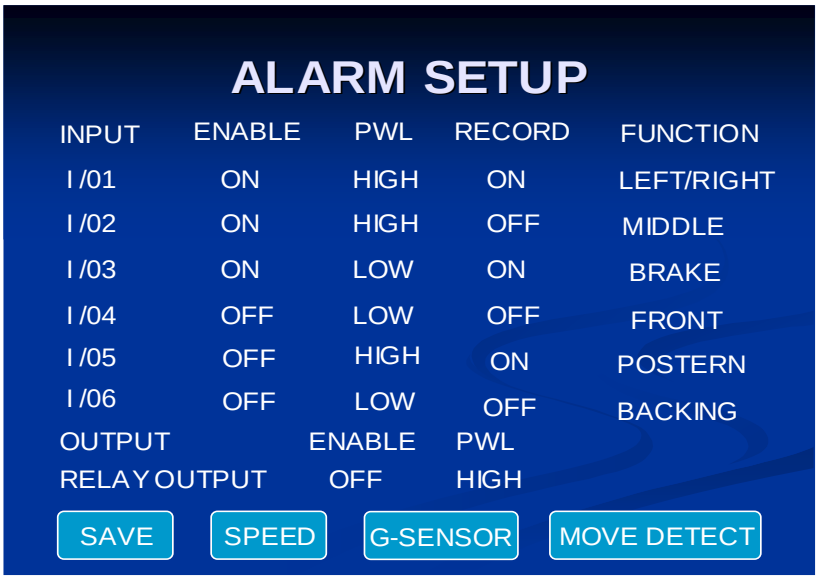
  Upon completion, press the Save button to save settings.

Note:

There's no difference in the length of timed on time and timed off time, the whole period is a cycle.

3.5.4. Alarm Setup

Set output parameters upon alarm.



- Alarm input

  Supporting synchronous input of up to 6 channels of alarm.

  "Enable": Set whether to enable the function upon alarm, press [ENTER] to input.

  "PWL": set high\low level, press [ENTER] to input.

  "Record": set whether to start alarm recording of this channel, press [ENTER] to input.

- Alarm output

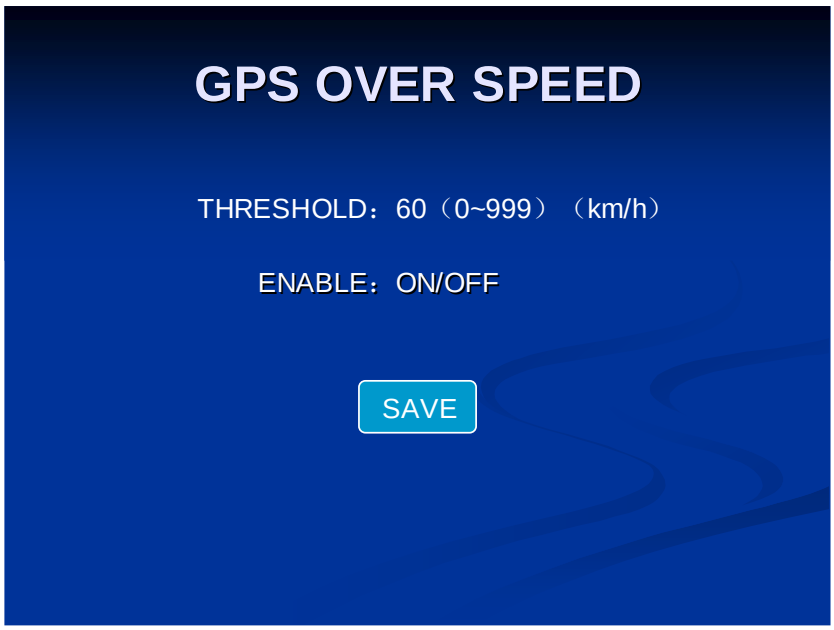
Supporting synchronous output of up to 1 channel of alarm.

“Enable”: Set whether to enable the function upon alarm, press [ENTER] to input.

“PWL”: set high\low level, press [ENTER] to input.

- GPS Overspeed

Move the cursor to “overspeed” and press [ENTER] to enter the following menu of overspeed alarm:



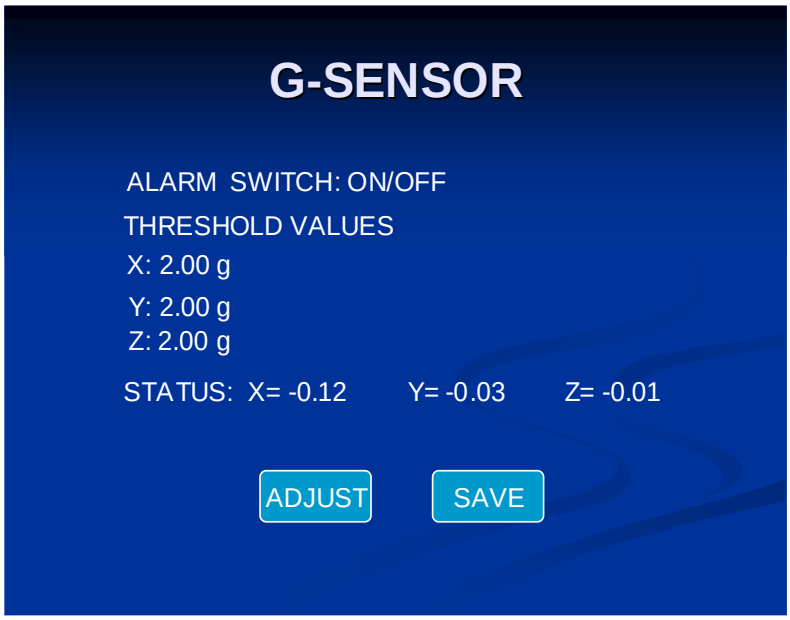
Threshold: 60km/h by default, adjustable within the range of 0~999. press DEL to delete the original number, press numeric keys to input.

Enable: On/Off, press [ENTER] to input;

- On: when the speed of the GPS exceeds the threshold value, the alarm recording will be started and alarm logs will be recorded;
- Off: when the speed of the GPS exceeds the threshold value, neither the alarm recording nor the alarm logs will be started

Upon completion, press the Save button to save settings.

- Acceleration
- Move the cursor to “G-Sensor”, press [ENTER] to enter the following menu of G-Sensor settings:



"Threshold": Set values of X, Y and Z directions within the range of 0.00g--9.99g, press DEL to delete the original number, press numeric keys to input.

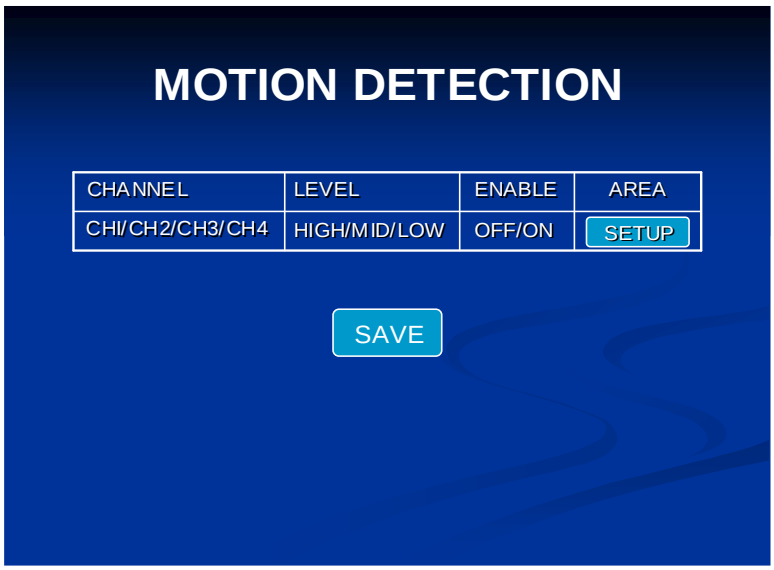
"Alarm Switch": set whether to enable or disable G-sensor alarm, press [ENTER] to input.

- Alarm on: In the recording status, when any of the directions of X, Y and Z exceed the "Threshold", the alarm recording and the alarm logs will be started.
- Alarm off: In the recording status, when any of the directions of X, Y and Z exceed the "Threshold", neither the alarm recording nor the alarm logs will be started.

"Adjust": Before initial use of the device, you need to click on "Adjust" on the menu for calibration of X/Y/Z values, press [ENTER] to input. Upon completion of the calibration, the current X, Y, Z values will be zeroed.

Upon completion, press the Save button to save settings.

■ Motion Detection



Channel: CH1/CH2/CH3/CH4, press [ENTER] to input;

Level: Hi/Med/Low, press [ENTER] to input;

Enable: Enable/Disable, press [ENTER] to input;

On: Upon alarm, the alarm recording and the alarm logs will be started;

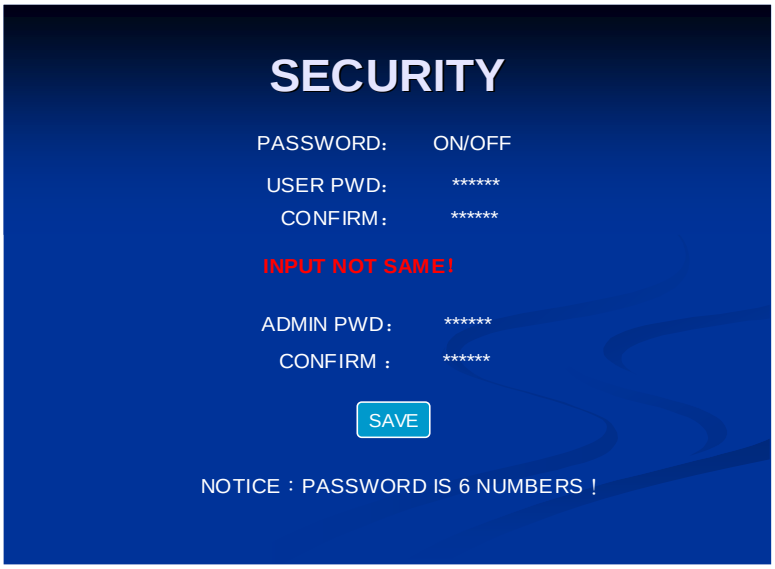
Off: Upon alarm, neither the alarm recording nor the alarm logs will be started;

Area: Set area and press [ENTER].

Upon completion, press the Save button to save settings.

3.5.5. Security Setup

Setting login password



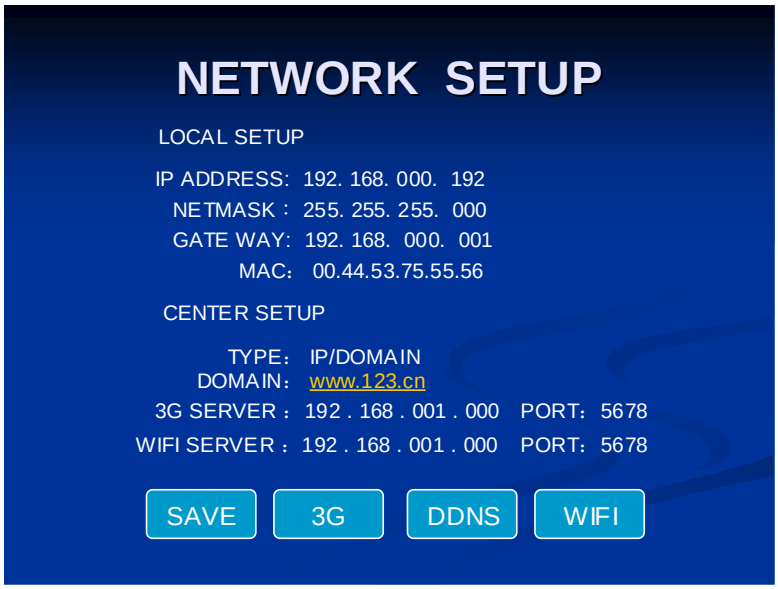
- Password

  Set whether to enable the login password, and then press [ENTER] to input.

  - On: When log in with the Admin password, Admin\User password can be set; When log in with the user password, only the User password can be set, press numeric keys to input, the passwords inputted twice should be consistent.
  - Off: Password cannot be set. After entering the menu, one can directly enter the main menu without login.

  Note: If there are multiple devices with the same power supply for recording, please set different password and device ID for each device so as to avoid disturbing other devices when operating one of them, the device ID may be modified in Basic Setup.

3.5.6. Network Setup



- Local setup

  Set the device IP address, netmask, gateway, MAC, etc., which should be within the same subnet with the center server, as shown in the figure above.

  WAN connection: No need to set local network.

- Center setup
  - Connection within the LAN

    Set the center server IP address, which should be within the same subnet with the device IP, the port number of 5678 is fixed.

    WAN connection
  - Server IP

    Set WAN IP
  - Port number

    For accessing with routers, port mask 5678 on the router must be set.
  - Domain name

    Targeting some users with dynamic IP, the user may apply for a DDNS account on line and set corresponding domain name. (e.g.: www.123.cn)

- Wi-Fi Setup

  Move the cursor to ‘Wi-Fi’, press [ENTER] to enter the following Wi-Fi menu:

- Wi-Fi

  On/ Off, press [Enter] for selection
- Encrypt

  On/ Off, press [Enter] for selection

  Encrypt type: WEP by default
- Wi-Fi wireless local network settings

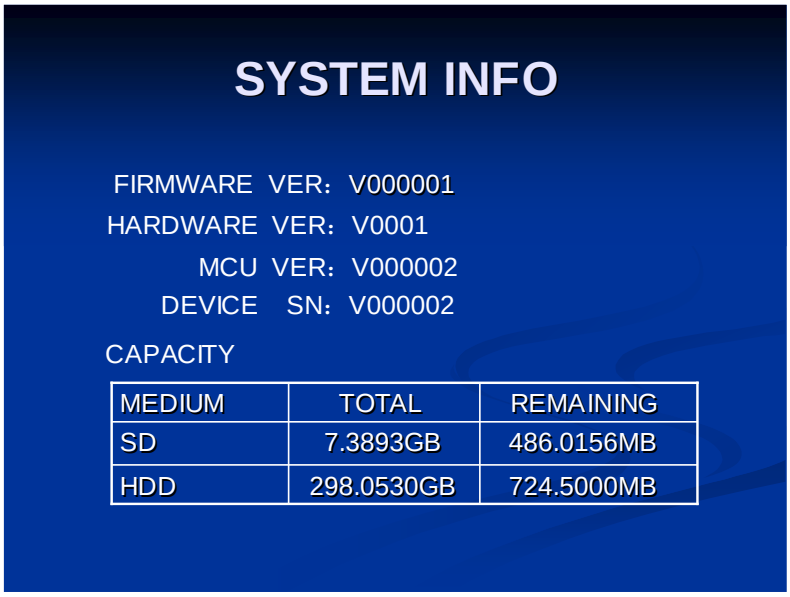
  Set IP, sub-mask, gateway, SSID, Password, etc., within the same subnet of the center server

  Upon completion, press the Save button to save settings.

  Note: The settings above should be corresponding to the router;

3.6. System Info

In the main menu, press the arrow keys to select the System Information menu, and press [ENTER] to enter the following menu of system information.



- Software version number

  Software version number of the device.
- Hardware version number

  Hardware version number of the device.
- MCU version number

  Version number of the SCM
- Hard drive information

  “**Storage Medium”:** SD and HDD.

  “Total Capacity”: displays the total capacity of the SD card and the hard drive.

  “Remaining”: displays the free space of the SD card and the hard drive.

3.7. Management Tools

In the main menu, press the arrow keys to select Management Tools menu and press [ENTER] to enter the following menu of Management Tools. The Management Tools menu mainly consists of Log Management, Disk Management, Defult set, Configuration Management, PTZ Management, OSD Settings, System Upgrade and Serial Port Management.

3.7.1. Log Management

The Log Management records events of startup and shutdown, GPS time correction, alarm moment, etc., including date, time and event name.

- Start Date

  Set the start date of the log recalled, press numeric keys to input.
- End Date

  Set the end date of the log recalled, press numeric keys to input.
- Start Time

  Set the start time of the log recalled, press numeric keys to input.
- End Time

  Set the end time of the log recalled, press numeric keys to input.

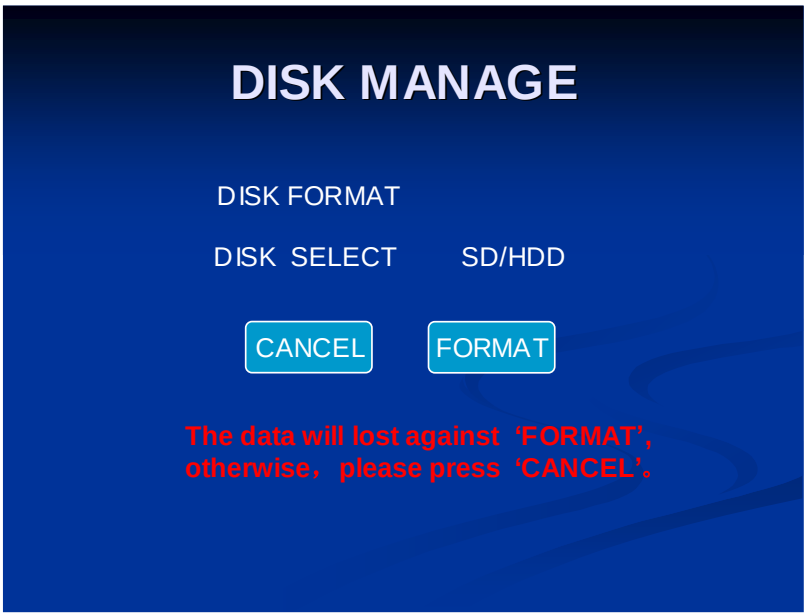
- Search Button

  Move the cursor to the Confirm button to search all log information during the period from the Start Time to the End Time, and press [ENTER] to search.

  Press the arrow keys to select “Home”, “Previous”, “Next”, “End”, and press [ENTER] to display page turning information.

3.7.2. Disk Management

It is mainly used for formatting designated disk.

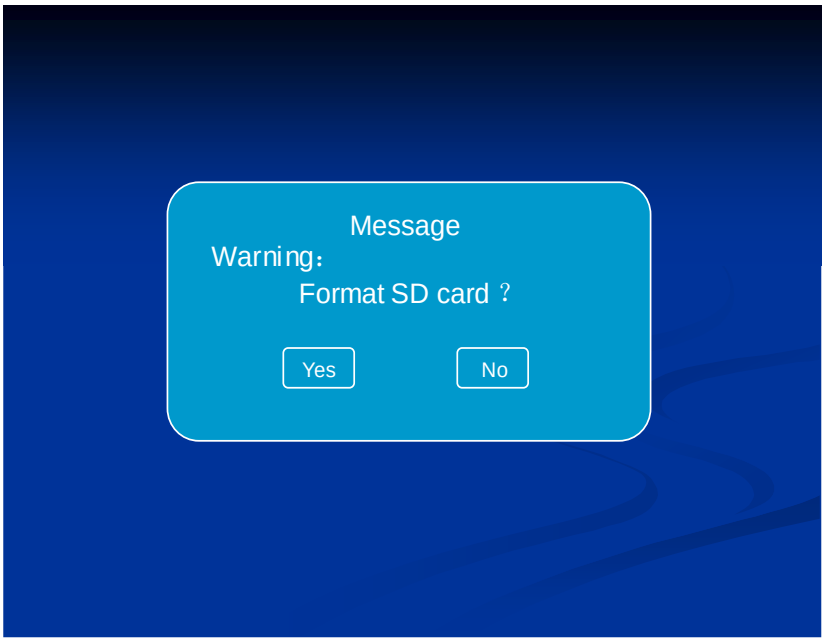


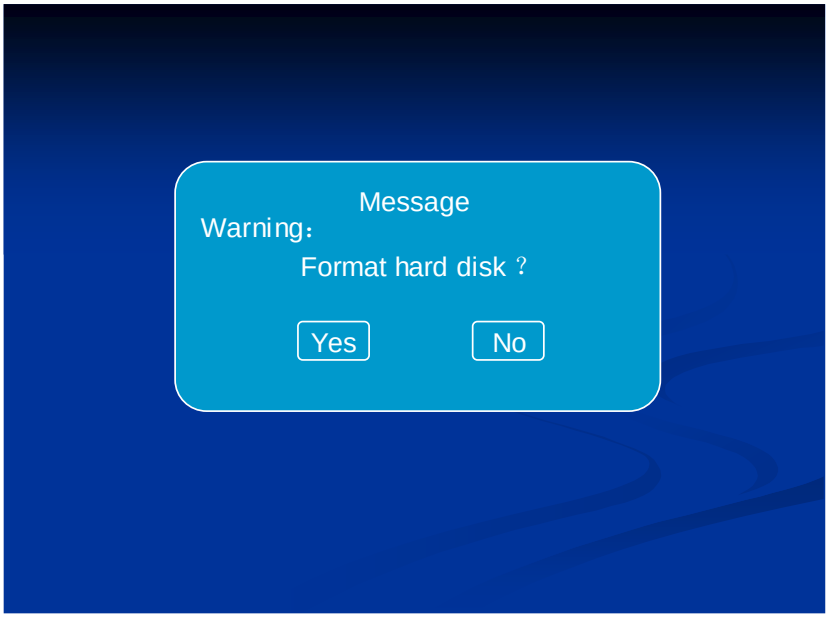
- Disk Selection

  Select SD or HDD, press [ENTER] for selection.

- Format Button

  Select the Format Button and press [ENTER], the following window will pop up.





“Yes”: Start formatting the SD card or hard drive, press [ENTER] to input.

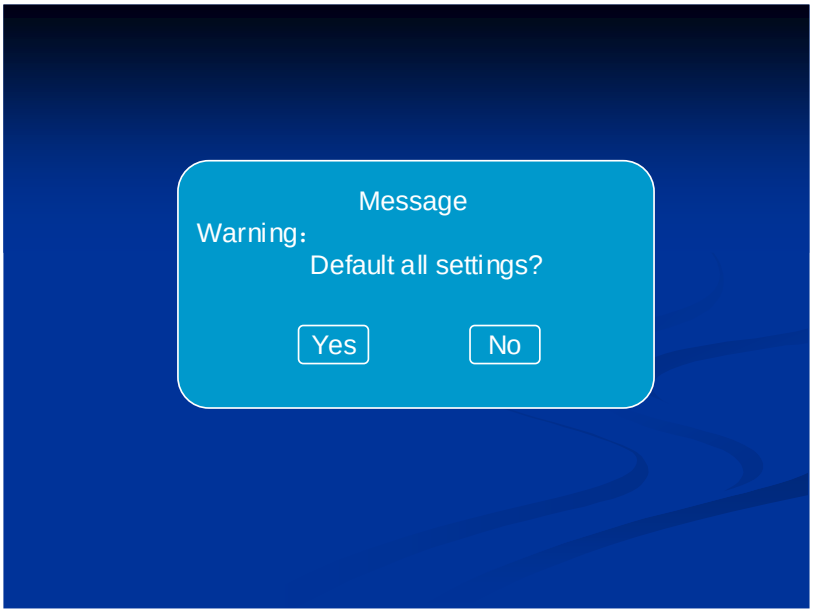
“No”: Cancel formatting and return to the Management Tools menu.

- Cancel Button

  Cancel disk management operations, press [ENTER] to return to the Management Tools menu.

3.7.3. Factory Settings

This restores factory settings of the device, and the settings of the system will restore the default settings.



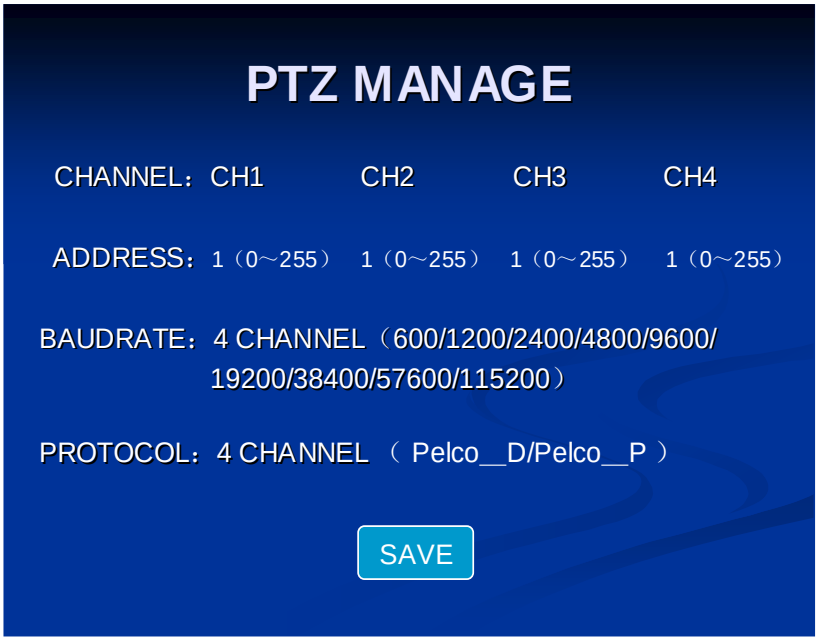
"Yes": Restore factory settings.
"No": Return to the Management Tools menu.

3.7.4. Configuration Management

Imports and exports configuration files.

Import Configuration: press [ENTER] to import the configuration file "DVR.CFG" from the root directory of the SD or hard drive;
Export Configuration: press [ENTER] to save the con figuration file "DVR.CFG" to the root directory of the SD or hard drive.

3.7.5. PTZ Management



- Channel

  Supporting 4 channels, each channel can be subject to independent serial port information settings.

- Address

  Set the address code corresponding to the channel.

- Baudrate

  Set the Baudrate of serial port communication, supporting 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

- Protocol

  Support Pelco-P and Pelco-D protocols.

3.7.6. OSD Setup

- Preview time superposition selection

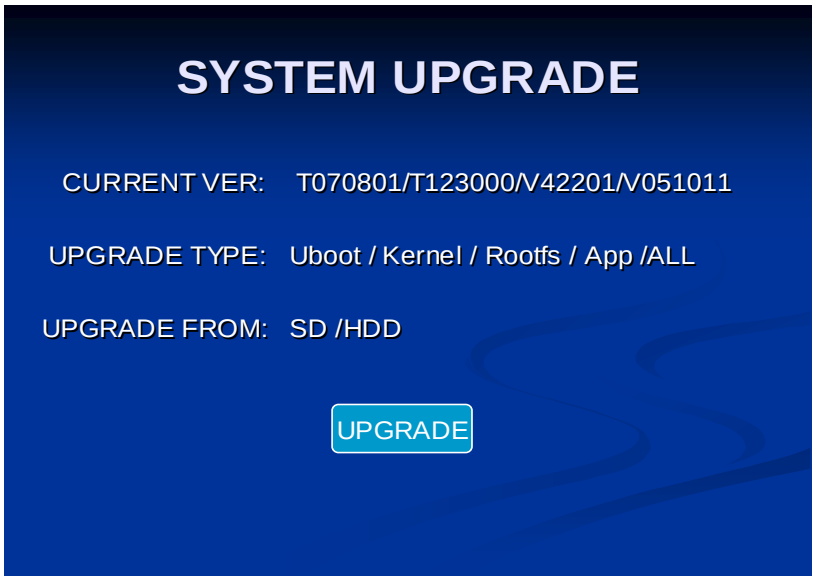
  Yes/No, press [ENTER] to select.
- Recording time superposition selection

  Yes/No, press [ENTER] to select.
- Recording license plate superposition selection

  Yes/No, press [ENTER] to select.
- Recording GPS superposition selection

  Yes/No, press [ENTER] to select.

3.7.7. System Upgrade


SYSTEM UPGRADE
CURRENT VER: T070801/T123000/V42201/V051011
UPGRADE TYPE: Uboot / Kernel / Rootfs / App /ALL
UPGRADE FROM: SD /HDD
UPGRADE

- Current Version

  Display corresponding version number according to the selection in Upgrading Type, the current version should be corresponding to the selected Upgrading Type.

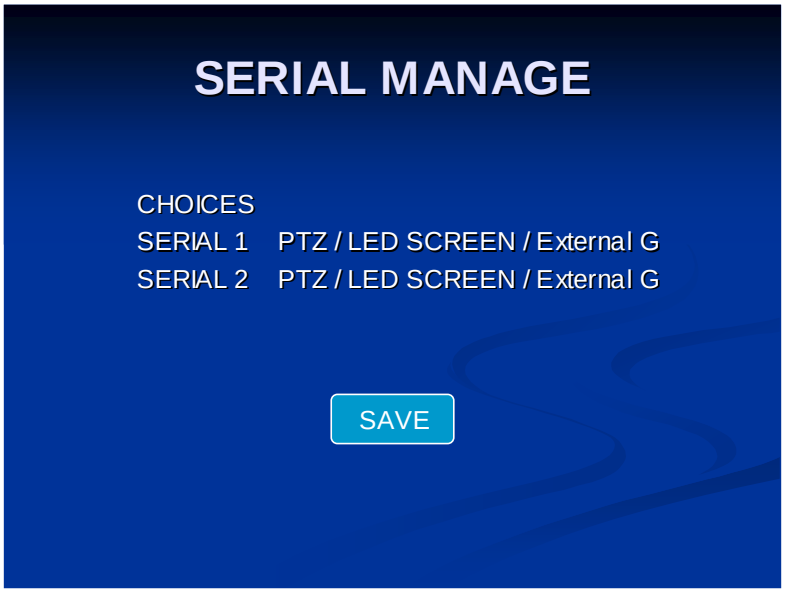
- Upgrade Type

  Uboot/Kernel/ Rootfs/ App/ ALL, press [Enter] for selection;

- Upgrade From

  Hard drive/SD card, select hard drive to copy to the hard drive, or select SD card to copy to the SD card, press [Enter] for selection;

3.7.8. Serial Management



- Serial port function selection

  The device supports function selection of external devices connected to the serial ports, currently supporting “PTZ Device”, “LED Display” for selection.

4. Host Upgrading Instructions

Precautions:

During the upgrading, the following operations are forbidden: power cut, plugging or insertion of hard disk or SD CARD, unlocking the hard drive lock or disabling ACC.

4.1. Upgrading Modes

This device supports local upgrading modes of SD card and hard drive; please refer to the network platform operation manual for network upgrading;

4.2. Upgrading Steps

4.2.1. Applications

Format of upgrading file name: XXXXX-APP-*******.crc

Step 1. Copy the file to be upgraded onto the SD card or hard drive, ensure complete

copy of the file;

Step 2. Insert the SD card or hard drive into the device, unpowered;

Step 3. Enter the system menu, Management Tools-System Upgrading-Upgrading Type (Select “Application”) -SD card or Hard drive to start upgrading;

Step 4. Messages like “System upgrading, do not cut the power”, “File check successful, auto reboot for upgrading! ”, “UPGRADING…”, “Do not power off”, “LOADING…”, etc. are shown on the screen.

Step 5. Upgrading completed, device rebooted and returning to the surveillance status.

4.2.2. Uboot/ Rootfs/Kernel

XXXXX-RFS-*******.crc

XXXXX-LDR-*******.crc

XXXXX-KNL-*******.crc

Please follow the same steps above for upgrading of uboot, rootfs and kernels.

4.2.3. SCM

Format of upgrading file name: XXXXX-MCU-*******.bin

Step 1. Copy the file to be upgraded onto the SD card or hard drive, ensure complete copy of the file;

Step 2. Insert the SD card or hard drive into the device, unpowered;

Step 3. Auto upgrading after powered on;

Step 4. Messages like “UPGRADE MCU!”, “SUCCESSFUI!”,“REBOOT!” are displayed on the screen successively;

Step 5. Upgrading completed, device rebooted and returning to the surveillance status.

Step 6. For SCM, there’s no need to enter interface settings, since there’s upgrading file on the disk, juts power on for upgrading directly.

4.2.4. Viewing Version Number

Press “INFO” on the remote controller or enter the system menu and select “Upgrade Information” to view the upgrade version number, only display the version numbers of software, hardware and SCM on this page; if the users want to view the version numbers of kernel, uboot or rootfs, please enter Management Tools menu-system upgrading, where the users can view corresponding version numbers when selecting Upgrading Types.

Note:

① Enter the Management Tools menu to resume factory settings, the device will automatically be reset to the surveillance status.

② Make sure that there’s upgrading file in the SD card or hard drive and the device is powered off before the upgrading;

③ During the upgrading, the indicator is in the current status without special status indicator, after the upgrading, the main device will restart from the surveillance status;

④ If the upgrading fails, there will be the following prompts: "No upgrading file",

"Already the latest version", "failure in starting upgrading", "file error" or "memory error".

5. FAQs

5.1. Questions on Recording

1) Q: The device fails to record video?
   A: This may be caused by the following causes:
   a) Incorrect setting of recording mode, for instance, the alarm recording mode is selected while there's no alarm; the timed recording mode is selected while the current time does not fall into the preset period;
   b) Check the disk space. If the disk space is lower than 500M and the auto writing function is disabled, the recording will be stopped;
   c) The ERR indicator on the front panel is on. You may check the system information whether the disk space is shown to be 0; check whether the disk is inserted and whether it is formatted;
   d) The recording functions of the 4 channels are disabled in the menu settings;
2) Q: No sound in the video?
   A: This may be caused by the following causes:
   e) Incorrect audio input connection. If the user connects line AIN1 and AIN2, the user needs to turn on the audio switch and select LINE IN input in the Recording Settings menu; if MICIN is connected, the user needs to turn on the audio switch and select MIC input in the Recording Settings menu;
   f) Audio output cable is not connected or incorrectly connected;

5.2. Questions on Alarm

1) Q: Invalid alarm triggering?
   A: This may be caused by the following causes:
   a) Incorrect settings on the Alarm Settings menu; such as failure to enable alarm for designated alarm input and incorrect output level configuration;
   b) Incorrect connection of alarm input or failure to connection alarm input;
   c) Incorrect signal level of the triggering source of alarm;
2) Q: Invalid alarm output?
   A: This may be caused by the following causes:
   a) Incorrect connection by the user;
   b) Incorrect menu settings, such as failure to enable alarm output or incorrect output level configuration;

5.3. Others

1) Q: The power indicator is not on when the device is powered on?
   A: This may be caused by the following causes:
   a) The voltage falls beyond the range between 8V and 36V;

b) The fuse on the power input wire is burnt out;
c) The ignition signal is not connected;

2) Q: The ERR indicator is on?
A: This may be caused by the following causes:
a) Neither the SD card nor the hard drive is inserted, or the SD card and hard drive are inserted while the system partitioning is abnormal, causing failure of the device in recognizing; 2) Disk reading/writing error;
b) Abnormal operation of the SCM;

3) Q: The SD card indicator is not on or flashing?
A: There are three states of the SD card indicator: on, out and flashing, respectively indicating the following:
Out: The SD card not inserted or failure of the device to recognize the SD card;
On: The SD card exists but not the storage for the current recording
Flashing: The SD card exists and is the storage for the current recording;

4) Q: The hard drive indicator is not on or flashing?
A: There are three states of the hard drive indicator: on, out and flashing, respectively indicating the following:
Out: The hard drive not inserted or failure of the device to recognize the hard drive;
On: The hard drive exists but not the hard drive for the current recording;
Flashing: The hard drive exists and is the disk of the current recording;

5) Q: Both the SD card indicator and the hard drive indicator are on while not flashing?
A: This may be caused by the following causes:
a) The device considers no current recording tasks according to the menu settings by the user;
b) Both the SD card and the hard drive are full while the auto overwriting function is disabled in the menu;

6) Q: Blank screen of some channels?
A: This may be caused by the following causes:
a) This channel is not connected to the video;
b) The camera connected to this channel is damaged or abnormal;
c) If the camera is powered through the device, it may be possibly that the voltage of the device cannot ensure normal operation of the camera;
d) Poor contact or damage of the cable connecting this channel;

7) Q: No GPS signal?
A: This may be caused by the following causes:
a) GPS antenna is not connected;
b) GPS antenna is placed indoors;
c) GPS module is damaged;

8) Q: Abnormal G-Sensor data?
A: This may be caused by the following causes:
a) G-Sensor not calibrated. G-Sensor should be calibrated in the settings menu;
b) G-Sensor is damaged;

9) Q: Video files cannot be played back on the PC?
A: This may be caused by the following causes:

a) Video file directory or video files are not selected. Please select the video file directory before playback;
b) Local video files are damaged, causing failure in reading;

10) Q: The remote controller does not work?
A: This may be caused by the following causes:
a) No battery in the remote controller;
b) Remote controller damaged;
c) Device failure;

11) Q: The map is not displayed during the playback?
A: This may be caused by the following causes:
a) The network cable for the PC for playback is not connected;
b) The PC is unavailable for accessing the network although the network cable is connected;

12) Q: How does the overwriting function of video files work when recording video on the SD card and the hard drive?
A: The SD card and the hard drive will respectively record video circularly, and when the SD card and the hard drive are full, the oldest video files in the card or disk will be deleted.

13) Q: Are remote on/off operations supported?
A: Not supported at present, but possibly.

14) Q: Are there suggestions on the priority of SD card? Is SDHC card supported?
A: Kingston SD card is mainly support at present, and SDHC card is also supported.